



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/833,702	04/13/2001	Jong-Won Seok	11349-P66578US0	4947
43569	7590	12/01/2005		
MAYER, BROWN, ROWE & MAW LLP 1909 K STREET, N.W. WASHINGTON, DC 20006			EXAMINER PARTHASARATHY, PRAMILA	
			ART UNIT	PAPER NUMBER
			2136	

DATE MAILED: 12/01/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

09/833,702

Applicant(s)

SEOK ET AL.

Examiner

Pramila Parthasarathy

Art Unit

2136

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 02 November 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-13 is/are pending in the application.
- 4a) Of the above claim(s) 3 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1,2,4 and 6-13 is/are rejected.
- 7) ☒ Claim(s) 5 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948)                                    | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## **DETAILED ACTION**

### ***Continued Examination Under 37 CFR 1.114***

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114.

2. Applicant's submission filed on November 02, 2005 has been entered and made of record.

### ***Response to Arguments***

3. Applicant's arguments with respect to claims 1, 2, 4 and 6 – 13 have been considered but are moot in view of the new ground(s) of rejection.

***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

4. Claims 1, 2, 4 and 6 – 13 are rejected under 35 U.S.C. 102(e) as being anticipated by Cheng et al. (U.S. Patent Number 6,892,175).

5. Regarding Claim 1, Cheng teaches

a linear prediction analyzing unit for receiving an original signal and detecting a prediction coefficient predetermined through the linear prediction analysis (Column 2 lines 5 – 32 and Column 4 line 50 – Column 5 line 45);

a delay unit for receiving the original signal and delaying it by a predetermined time (Column 2 lines 5 – 32);

a linear prediction analysis filtering unit for filtering the signal delayed in the delay unit by using the prediction coefficient detected in the linear prediction analyzing unit (Column 2 lines 5 – 32 and Column 4 line 50 – Column 5 line 45);

a frequency area converting unit for converting the signal outputted from the linear prediction analysis filtering unit into a frequency area signal (Column 2 lines 5 – 32 and Column 4 line 50 – Column 5 line 45);

a psychological acoustic modeling unit for receiving the original signal and gaining a masking threshold by employing a psychological acoustic model (Column 1 lines 20 – 33);

a time-varying adaptation filtering unit for performing a control so that the signal outputted from the frequency area converting unit may have a magnitude approximate a magnitude the masking threshold gained in the psychological acoustic modeling unit (Column 2 lines 5 – 32 and Column 4 line 50 – Column 5 line 45);

a time area converting unit for changing the signal outputted from the time-varying adaptation filtering unit to a time area signal (Column 2 lines 5 – 32 and Column 4 line 50 – Column 5 line 45);

an error correction coding unit for receiving copyright information and providing an error correction function (Column 2 lines 5 – 32 and Column 4 line 50 – Column 5 line 45);

a code generating unit for providing a code to the time area signal outputted from the time area converting unit response to a signal outputted from the error correction coding unit (Column 2 lines 5 – 32; Column 4 line 50 – Column 5 line 45 and Column 11 lines 15 – 66); and

computing unit for adding and deducting the signal having the code provided from the code generating unit to/from the original signal response to a corresponding

Art Unit: 2136

code (Column 2 lines 5 – 32; Column 4 line 50 – Column 5 line 45 and Column 11 lines 15 – 66);

wherein said psychological acoustic modeling unit receives the original audio signal and obtains the masking threshold as a threshold capable of sensing audio original sound in a frequency area by employing a psychological acoustic model (Column 2 lines 5 – 32; Column 4 line 50 – Column 5 line 45 and Column 8 lines 18 – 50).

6. Regarding Claim 6, Cheng teaches

linear prediction analyzing unit for receiving a signal having an imbedding of a watermark and outputting a prediction coefficient predetermined through the linear prediction analysis (Column 2 lines 5 – 32 and Column 4 line 50 – Column 5 line 45);

linear prediction analysis filtering unit filtering the signal having the imbedding the watermark by using the prediction coefficient extracted from the linear prediction analyzing unit (Column 2 lines 5 – 32 and Column 4 line 50 – Column 5 line 45);

an autocorrelation acquiring unit for receiving filtered value outputted from the linear prediction analysis filtering unit and gaining an autocorrelation (Column 2 lines 5 – 32 and Column 4 line 50 – Column 5 line 45);

a code detecting unit for detecting a code of a correlation outputted from the autocorrelation acquiring unit (Column 2 lines 5 – 32; Column 4 line 50 – Column 5 line 45 and Column 11 lines 15 – 66); and

an error correction decoding unit for performing an error correction decoding according code detection result watermark by using value outputted from the code detecting unit and extracting a watermark signal (Column 2 lines 5 – 32; Column 4 line 50 – Column 5 line 45 and Column 11 lines 15 – 66).

7. Regarding Claim 8, Cheng teaches

receiving an original signal, detecting a prediction coefficient predetermined through the linear prediction analysis, delaying by predetermined time, and gaining a masking threshold by employing a psychological acoustic model (Column 2 lines 5 – 32; Column 4 line 50 – Column 5 line 45 and Column 8 lines 18 – 50);

filtering the delayed audio signal by using the detected prediction coefficient (Column 2 lines 5 – 32; Column 4 line 50 – Column 5 line 45 and Column 8 lines 18 – 50);

converting a value filtered in said second step into a frequency area signal (Column 2 lines 5 – 32; Column 4 line 50 – Column 5 line 45 and Column 8 lines 18 – 50);

AR(Auto-regressive)-filtering the frequency area signal by using the masking threshold (Column 2 lines 5 – 32; Column 4 line 50 – Column 5 line 45 and Column 8 lines 18 – 50);

converting the signal filtered in said fourth step into a time area signal (Column 2 lines 5 – 32; Column 4 line 50 – Column 5 line 45 and Column 8 lines 18 – 50);

generating an error correction code having copyright information and an error correction function, code to the time area signal according to and providing the error correction code (Column 2 lines 5 – 32; Column 4 line 50 – Column 5 line 45 and Column 8 lines 18 – 50);

adding and deducting the time area signal to/from the original signal according to the provided code, and producing a signal having an imbedding of the watermark (Column 2 lines 5 – 32; Column 4 line 50 – Column 5 line 45 and Column 8 lines 18 – 50).

8. Regarding Claim 10, Cheng teaches

receiving a signal having an imbedding of a watermark, and detecting a prediction coefficient predetermined through the linear prediction analysis (Column 2 lines 5 – 32; Column 4 line 50 – Column 5 line 45 and Column 8 lines 18 – 50);

filtering the signal having the imbedding of watermark by using the detected prediction coefficient (Column 2 lines 5 – 32; Column 4 line 50 – Column 5 line 45 and Column 8 lines 18 – 50);

measuring an autocorrelation of the filtered signal (Column 2 lines 5 – 32; Column 4 line 50 – Column 5 line 45 and Column 8 lines 18 – 50);

detecting a code for the measured correlation (Column 2 lines 5 – 32; Column 4 line 50 – Column 5 line 45 and Column 8 lines 18 – 50); and,



performing an error correction decoding by using the code detection result, and extracting a watermark signal(Column 2 lines 5 – 32; Column 4 line 50 – Column 5 line 45 and Column 8 lines 18 – 50).

**9. Regarding Claim 12, Cheng teaches**

a first function of receiving an original signal, detecting a prediction coefficient predetermined through the linear prediction analysis, delaying by predetermined time, and gaining a masking threshold by employing a psychological acoustic model (Column 2 lines 5 – 32; Column 4 line 50 – Column 5 line 45 and Column 8 lines 18 – 50);

a second function of filtering the delayed audio signal by using the detected prediction coefficient (Column 2 lines 5 – 32; Column 4 line 50 – Column 5 line 45 and Column 8 lines 18 – 50);

a third function of converting a value filtered in said second function into a frequency area signal (Column 2 lines 5 – 32; Column 4 line 50 – Column 5 line 45 and Column 8 lines 18 – 50);

a fourth function of AR(Auto-regressive)-filtering the frequency area signal by using the masking threshold (Column 2 lines 5 – 32; Column 4 line 50 – Column 5 line 45 and Column 8 lines 18 – 50);

a fifth function of converting the signal filtered in said fourth function into a time area signal (Column 2 lines 5 – 32; Column 4 line 50 – Column 5 line 45 and Column 8 lines 18 – 50);

a sixth function of generating an error correction code having copyright information and an error correction function, code to the time area signal according to and providing the error correction code (Column 2 lines 5 – 32; Column 4 line 50 – Column 5 line 45 and Column 8 lines 18 – 50);

a seventh function of adding and deducting the time area signal to/from the original signal according to the provided code, and producing a signal having an imbedding of the watermark (Column 2 lines 5 – 32; Column 4 line 50 – Column 5 line 45 and Column 8 lines 18 – 50).

**10. Regarding Claim 13, Cheng teaches**

a first function of receiving a signal having an imbedding of a watermark, and detecting a prediction coefficient predetermined through the linear prediction analysis (Column 2 lines 5 – 32; Column 4 line 50 – Column 5 line 45 and Column 8 lines 18 – 50);

a second function of filtering the signal having the imbedding the watermark by using the prediction coefficient extracted from the linear prediction analyzing unit (Column 2 lines 5 – 32; Column 4 line 50 – Column 5 line 45 and Column 8 lines 18 – 50);

a third function of measuring an autocorrelation of the filtered signal (Column 2 lines 5 – 32; Column 4 line 50 – Column 5 line 45 and Column 8 lines 18 – 50);

a fourth function of detecting a code for the measured correlation (Column 2 lines 5 – 32; Column 4 line 50 – Column 5 line 45 and Column 8 lines 18 – 50); and

a fifth function of performing an error correction decoding by using the code detection result, and extracting a watermark signal (Column 2 lines 5 – 32; Column 4 line 50 – Column 5 line 45 and Column 8 lines 18 – 50).

**11.** Claims 2, 7, 9 and 11 are rejected as applied above in rejecting claims 1, 6, 8 and 10. Furthermore, Cheng teaches linear prediction analyzing unit extracts the prediction coefficient capable predicting audio peculiar spectrum through the linear prediction analysis (Column 2 lines 5 – 32; Column 4 line 50 – Column 5 line 45 and Column 8 lines 18 – 50).

**12.** Claim 4 is rejected as applied above in rejecting claim 1. Furthermore, Cheng teaches delay unit receives the original signal and delays it by predetermined constant time, and after that, sends the delayed signal to the linear prediction analysis filtering unit, said delayed constant time becoming a key value in a watermark detection (Column 2 lines 5 – 32; Column 4 line 50 – Column 5 line 45 and Column 8 lines 18 – 50).

***Allowable Subject Matter***

13. Claim 5 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

***Conclusion***

14. Examiner's Note: Examiner has cited particular columns and line numbers in the references as applied to the claims above for the convenience of the applicant.

Although the specified citations are representative of the teachings in the art and are applied to the specific limitations within the individual claim, other passages and figures may apply as well. It is respectfully requested from the applicant, in preparing the responses, to fully consider the references in entirety as potentially teaching all or part of the claimed invention, as well as the context of the passage as taught by the prior art or disclosed by the examiner.

15. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. See PTO Form 892.


Applicant is urged to consider the references. However, the references should be evaluated by what they suggest to one versed in the art, rather than by their specific

disclosure. If applicants are aware of any better prior art than those are cited, they are required to bring the prior art to the attention of the examiner.

**16.** Any inquiry concerning this communication or earlier communications from the examiner should be directed to Pramila Parthasarathy whose telephone number is 571-272-3866. The examiner can normally be reached on 8:00a.m. To 5:00p.m.. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ayaz Sheikh can be reached on 571-232-3795. Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-305-3900.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR only. For more information about the PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Pramila Parthasarathy  
November 28, 2005.

  
AYAZ SHEIKH  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 2100